

DRAFT,

Formatted: English (United States), Check spelling and grammar

**BEREC Guidelines on the application of Article 3 of
Regulation (EU) 2022/612 of 6 April 2022 on roaming
on public communications networks ~~within the~~
Union
(Wholesale Roaming Guidelines)**

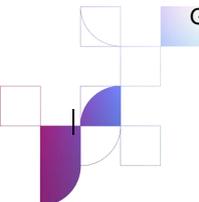
XX March, 2026
30 September, 2022



Formatted: RegistrationNumber, Left
Formatted: Font: 12 pt

Table of Contents

- 1. Introduction.....4**
- 2. Wholesale roaming provisions5**
 - Guideline 1. Entry into force5
 - Guideline 2. Types of access services offered6
 - Guideline 3. Reasonable requests6
 - Guideline 4. Identity of access seekers7
 - Guideline 5. Refusal of requests8
 - Guideline 6. Prioritisation of requests9
 - Guideline 7. Information required from an access seeker9
 - Guideline 8. Information required before signature of an access agreement9
 - Guideline 9. Information required on an ongoing basis10
- 3. Wholesale Roaming Access Services10**
 - Guideline 10. Direct access.....10
 - Guideline 11. Resale access.....11
 - Guideline 12. Machine-to-machine communication services12
 - Guideline 13. Unregulated roaming services13
 - Guideline 14. “Retail related” wholesale functions which can practically or economically be provided only by the access provider.....13
 - Guideline 15. Fair and reasonable prices14
 - Guideline 16. Wholesale charges for emergency communications14
 - Guideline 17. Reception of public warnings.....14
 - Guideline 18. Fair and reasonable charges for resale of termination15
 - Guideline 19. Non-discrimination for operational procedures15
 - Guideline 20. Value-added services16
 - Guideline 21. QoS obligations for wholesale roaming access seekers.....16
- 4. Reference Offer17**
 - Guideline 22. Obligations to publish a Reference Offer17
 - Guideline 23. Agreement on performance18
 - Guideline 24. Information on QoS parameters and specifications provided in the Reference Offer19
 - Guideline 25. Phasing-out of previous mobile generations20
 - Guideline 26. Information regarding access to emergency services through emergency communications.....20
 - Guideline 27. Interconnection management21
 - Guideline 28. Conversion of megabytes to gigabytes21



Formatted: RegistrationNumber, Left
Formatted: Font: 12 pt

Guideline 29. Interoperability, interfaces and protocols.....21

Guideline 30. Implementation of CAMEL protocol phase I for direct access21

Guideline 31. Implementation of CAMEL protocol advanced phases for direct access .22

Guideline 32. Testing procedures22

Guideline 33. Security, data privacy and interconnection22

Guideline 34. Information about permanent roaming and anomalous or abusive use ...22

Guideline 35. Measures to prevent permanent roaming or anomalous or abusive use .23

Guideline 36. Procedure prior to the unilateral termination of wholesale roaming agreements in case of permanent roaming or abusive or anomalous usage23

Guideline 37. Definition of organised resale24

Guideline 38. Fraud prevention procedure24

Guideline 39. Wholesale roaming agreement duration including any break clauses24

Guideline 40. Restrictions on conduct of business25

Guideline 41. Supply conditions which deter entry25

Guideline 42. Management and implementation of new roaming agreements25

Guideline 43. Update of the Reference Offer26

Guideline 44. Timing issues26

Guideline 45. Responses to requests for access26

Guideline 46. New and modified services26

Guideline 47. Negotiation time27

Guideline 48. Implementation time.....27

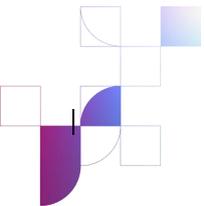
5. Disputes and NRA intervention27

Guideline 49. Modifications of Reference Offers by NRAs27

Guideline 50. Dispute resolution27

Guideline 51. General intervention of NRAs or other CAs apart from unilateral termination and disputes28

Guideline 52. Charges in currencies other than the Euro28



1. Introduction

These Wholesale Roaming Guidelines replace the BEREC Guidelines of ~~2022~~2017 (BoR (22) 147, 17-114) which concern the wholesale roaming access obligations for MNOs and the rights for access seekers on the application of Article 3 of Regulation (EU) ~~531/2012~~¹ as amended by Regulation (EU) 2015/2120² and Regulation (EU) 2017/920³ (previous Roaming Regulation). ~~The revision of the BEREC Guidelines of 2017 was necessary to include the changes introduced by the new Roaming Regulation (EU) 2022/612 of 6 April 2022 on roaming on public communications networks within the Union⁴ (hereafter "Roaming Regulation").~~ The revision of the BEREC Guidelines of 2022 was necessary to take into account the mutual granting of internal market treatment with respect to the sector of roaming on public mobile communications networks between the European Union and Ukraine, and the mutual granting of further market opening with respect to the sector of roaming on public mobile communications networks between the European Union and Moldova, both becoming effective as of 1 January 2026.

This document contains the Guidelines~~guidance~~, which BEREC is required to publish under Article 3 (8) the Roaming Regulation relating to the consistent application of Article 3. These Guidelines are~~The guidance is~~ not presented as an official legal interpretation. Nevertheless, NRAs are required to take the Guidelines~~guidance~~ into utmost account when resolving any disputes or taking any enforcement actions concerning Article 3. In particular, where NRAs make a decision, which departs from these Guidelines~~this guidance~~, they will be expected to state objective reasons for the departure. These Guidelines are complementary to the BEREC Retail Roaming Guidelines⁵.

According to Article 3 (1) Roaming Regulation, mobile network operators (MNOs) shall meet all reasonable requests for wholesale roaming access, comprising direct wholesale roaming access and wholesale roaming resale access. **Direct wholesale roaming access** is defined in Article 2 (2l) Roaming Regulation and refers to the case where~~when~~ the retail provider contracts directly with a foreign visited network for the purpose of allowing roaming customers to access the roaming services of the roaming provider. It is worth noting that "direct" access is not necessarily physical. The concept also includes the possibility of a direct charging agreement between roaming provider and visited network operator, in conjunction with physical access negotiated with a host MNO. **Resale wholesale roaming access** is defined in Article 2 (2m) Roaming Regulation and refers to the case where~~when~~ the retail provider bases its retail service on the wholesale service provided by an MNO – usually, but not necessarily, in the end-user's home country. For all cases, the provided access needs to allow

¹ ~~Regulation (EU) 531/2012 on roaming on public mobile communications networks within the Union.~~

² ~~Regulation (EU) 2015/2120 of the European Parliament and of the Council of 25 November 2015 laying down measures concerning open internet access and amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services and Regulation (EU) No 531/2012 on roaming on public mobile communications networks within the Union.~~

³ ~~Regulation (EU) 2017/920 of the European Parliament and of the Council of 17 May 2017 amending Regulation (EU) No 531/2012 as regards rules for wholesale roaming markets.~~

⁴ <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32022R0612>

⁵ ~~A separate consultation of Retail Roaming guidelines is expected after the approval by BEREC BoR in the second Plenary meeting for 2022. The final text of the Retail Roaming guidelines is expected after the approval by BEREC BoR in the fourth Plenary meeting for 2022 (mid-December 2022). The final text of the Wholesale Roaming guidelines will be published by 5 October 2022.~~

roaming providers to replicate the retail mobile services offered domestically where this is technically feasible.

~~The Guidelines apply to “regulated” roaming services, as defined in the Regulation. Except where the Regulation explicitly applies to other services, the Regulation applies immediately in EU Member States. The Roaming Regulation also applies to regulated roaming services in the EEA EFTA states Iceland, Liechtenstein and Norway when it is incorporated in the EEA agreement and approved by their respective parliaments.~~

2. Wholesale roaming provisions

Guideline 1. Geographical scope of the wholesale roaming provisions

The Roaming Regulation applies to the EU Member States and the EEA EFTA states Iceland, Liechtenstein and Norway – following its incorporation in the EEA agreement and its subsequent approval by their respective national parliaments.

With effect from 1 January 2026, the European Union and Ukraine granted each other mutual internal market treatment with respect to the sector of roaming on public mobile communications networks⁶. Likewise, with effect from 1 January 2026, the European Union and Moldova granted each other mutual further market opening with respect to the sector of roaming on public mobile communications networks⁷. For purposes of these Guidelines, “internal market treatment” and “further market opening” have the same legal effect. It should be noted, however, that the mutual treatment does not extend to relations between roaming service providers and operators in the EEA EFTA States and those in Ukraine or Moldova, nor does it apply to relations between roaming service providers and operators in Ukraine and Moldova. The mutual treatment applies only in relation with roaming service providers and operators authorised in accordance with the legislation of Ukraine and Moldova, respectively.

The table below summarises the recognition of internal market treatment for roaming and the resulting applicability of the wholesale roaming provisions set out in the Roaming Regulation between the EU, the EEA EFTA States, Ukraine and Moldova.

Table 1: Roaming Internal Market Treatment and applicability of the wholesale roaming provisions

<u>Recognize(s) as internal market:</u>	<u>EU Member States</u>	<u>EEA EFTA States (IS, LI, NO)</u>	<u>Ukraine</u>	<u>Moldova</u>
<u>EU Member States</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>

⁶ Decision No 2/2025 of the EU-Ukraine Association Committee in Trade Configuration of 16 July 2025 on the European Union and Ukraine granting each other internal market treatment with respect to the sector of roaming on public mobile communications networks (OJ L, 2025/1742, 18.8.2025, ELI: <http://data.europa.eu/eli/dec/2025/1742/oj>).

⁷ Decision No 1/2025 of the EU-Republic of Moldova Association Council of 4 August 2025 as regards the further market opening with respect to the sector of roaming on public mobile communications networks and amending Annex XXVIII-B (Rules applicable to telecommunication services) to the Association Agreement between the European Union and the European Atomic Energy Community and their Member States, of the one part, and the Republic of Moldova, of the other part [2025/2020] (OJ L, 2025/2020, 6.10.2025, ELI: <http://data.europa.eu/eli/dec/2025/2020/oj>).

EEA EFTA States (IS, LI, NO)	Yes	Yes	No	No
Ukraine	Yes	No	N/A	No
Moldova	Yes	No	No	N/A

For the purposes of these Guidelines, and for the sake of simplicity, the term “RLAH (Roam-Like-At-Home) Country” refers to a State in which internal market treatment with respect to the sector of roaming is granted⁸ and the term “RLAH Area” designates the collective set of all such States. **It should be noted, as highlighted in the table above, that the scope of these definitions varies depending on the perspective of the home country, as the composition of the relevant RLAH Countries differs for home countries in the European Union, in the EEA EFTA States, in Ukraine and in Moldova.**⁹

Guideline 1. Entry into force

~~The basic obligation to meet reasonable requests for access has been unchanged and nevertheless applies from 1 July 2012, the date of entry into force of the Regulation (EU) 531/2012.~~

~~As of 1 January 2013, MNOs must offer wholesale roaming services on the basis of a Reference Offer based on BEREC Guidelines. MNOs need to update their Reference Offers to take account of the provisions of the Roaming Regulation.~~

~~Existing access agreements, to the extent that they deal with regulated roaming services, need to be updated as necessary to make them consistent with the Roaming Regulation. BEREC considers that the terms and conditions included in the existing agreements that are not affected by the provisions of the new Roaming Regulation are not expected to be re-negotiated if there is no such need by the Roaming Regulation.~~

Guideline 2. Types of access services offered

MNOs must offer both direct and resale wholesale roaming access, as defined in Article 2 (2l) and 2 (2m) Roaming Regulation.

Subject to any limitations on the services the MNO provides to its own customers, access has to be sufficient to allow the access seeker to offer both prepaid and postpaid services.

Guideline 3. Reasonable requests

According to Recital 14 Roaming Regulation, wholesale roaming agreements should respect the principle of technology neutrality and ensure that all operators have an equal and fair

⁸ ~~Although the term “RLAH” is used for the sake of simplicity, it should be noted that all provisions of the Roaming Regulation apply in full to the geographical extension to Ukraine and Moldova.~~

⁹ ~~For example, the RLAH Area from the perspective of Norway comprises the EU Member States together with the three EEA EFTA countries, whereas the RLAH Area from the perspective of Ukraine comprises the EU Member States together with Ukraine and the RLAH Area from the perspective of Moldova comprises the EU Member States together with Moldova.~~

Formatted: Font: 12 pt

Formatted: RegistrationNumber, Left

opportunity to access all available networks and technologies and agreements are to be negotiated in good faith to allow roaming providers to offer retail roaming services equivalent to the services they offer domestically. Article 3 (1) Roaming Regulation requires MNOs to grant all reasonable requests for access to all available technologies and networks which may be necessary in order for the access seeker to provide a retail roaming service (and relevant ancillary services) allowing the replication of retail mobile services offered domestically by the retail roaming provider for its roaming subscribers, where this is technically feasible.

Whether or not a request is reasonable will always be judged on the merits of the case. But as a general rule, BEREC expects that any request which does not require deployment of an undue level of resources to be implemented, and where it is reasonable to foresee that the implementation costs will be recovered within a reasonable period, would be regarded as reasonable.

Requests for access in order to provide services which are not regulated roaming services are not covered by the Article 3 Roaming Regulation obligations or by these Guidelines. Except where there is national regulation of such access in individual [RLAH CountriesMember States](#), any such requests have to be negotiated on commercial terms.

Guideline 4. Identity of access seekers

Any undertaking which is entitled, under the law of the [RLAH Country concernedMember State in question](#), to provide retail roaming services to roaming customers from that [RLAH CountryMember State](#) enjoys the right to request wholesale roaming access under the terms of Article 3 Roaming Regulation in order to serve [Union¹⁰](#)-roaming customers [of the RLAH Area](#). This includes MNOs, full and light MVNOs and resellers¹¹. BEREC expects that requests for direct access may be limited for technical reasons to MNOs and full MVNOs.

BEREC considers that operators of hub aggregation services which do not directly serve [Union](#)-roaming customers [of the RLAH Area](#) are nevertheless entitled to negotiate access sufficient for, and limited to, the purpose of serving [Union](#)-providers of regulated retail roaming services [in the RLAH Countries](#). The wholesale roaming access provider is entitled to specify reasonable standards, procedures and protocols for such access. As a general rule, each party will bear its own costs of connectivity and access.

Both access seekers and access providers are entitled to request that the wholesale roaming service is to be provided via a hub. In the case only one party makes such a request and the connection via a hub entails additional costs for the other party (as monthly fees or any additional fee to be paid to the hub), the party requesting to connect via the hub will carry these additional costs for the other party. When both the access seeker and the access provider request the use of a hub to connect and it is not possible to reach an agreement on the hub's interconnection, the access seeker will have priority in using the hub of its preference for service provision.

Article 2 (2f) Roaming Regulation defines 'roaming customer', which is [a customeran end user](#) of a roaming provider of regulated retail roaming services, by means of a [terrestrial](#) public

¹⁰ ~~The Roaming Regulation also applies to the EEA EFTA states Iceland, Liechtenstein and Norway when it is incorporated in the EEA agreement and approved by their respective parliaments.~~

¹¹ The terms reseller and aggregator have the same meaning in the BEREC Guidelines on Wholesale Roaming.

Formatted: Default Paragraph Font, Font: 9 pt

Formatted: Indent: Left: 0 cm, Hanging: 0.5 cm, Keep lines together

Formatted: Font: 9 pt

Formatted: RegistrationNumber, Left

Formatted: Font: 12 pt

mobile communications network situated in the Union¹², whose retail contract or arrangement with that roaming provider permits Union-wide roaming. BEREC considers that a roaming customer could, for example, be identified by numbering resources from [RLAH Countries](#)~~Union Member States~~ which are in accordance with the ITU-T Recommendation E.164 or ITU-T Recommendation E.212.

Guideline 5. Refusal of requests

Requests for access may not be refused except for objectively justified reasons, such as technical feasibility and network integrity, backed up by evidence where appropriate¹³. In BEREC's view, the MNO may not, during consideration of the request, seek information on the commercial nature of the services which the access seeker plans to offer, other than to verify that the wholesale roaming service in question will not be used for purposes other than the provision of regulated retail roaming services to roaming providers' customers while the latter are periodically travelling. Commercial considerations shall not be grounds to refuse wholesale roaming access. BEREC considers examples for commercial considerations to be the cases where visited network operators and access seekers compete in the provision of same services, and where the access seeker wishes to bring innovations to market, committed volumes, number and type of roaming subscribers etc. Refusal on the basis of an unfounded suspicion of a particular behaviour or outcome is not justifiable. Full reasoning for any refusal must be provided in writing to the access seeker within a reasonable timeframe. BEREC considers that a reasonable timeframe could be one month after the initial receipt of the request by the MNO (as in the case of providing a draft wholesale roaming agreement in accordance with Article 3 (5) Roaming Regulation).

According to Recital 15 Roaming Regulation, refusal to provide wholesale roaming access is only possible when visited network operators which receive such a request can prove that it is technically unfeasible to grant it or network integrity is at risk. The parameters and specifications under which mobile services are offered by the visited network operator to its own domestic customers are understood to be technically feasible to provide access to the home operator.

The possibility to refuse granting access to a specific technology does not mean that wholesale roaming access to other available mobile services can be refused as well.

Neither explicit nor constructive refusal on the basis that access would be available from another provider is justifiable.

Without prejudice to the generality of the above-mentioned, BEREC does not envisage that any of the circumstances specified in the following indicative list would constitute legitimate reasons for refusal of a request:

- network or signalling saturation;
- network planning or releases;
- limitations in billing or “back office” systems;
- the necessity to make significant investments to support access, unless it is reasonable to foresee that the investment costs cannot be recovered in a reasonable period;

¹² It should be noted, however, that the geographical scope of the Union's roaming rules have evolved over time and no longer coincide exclusively with the territory of the European Union, as previously explained under Guideline

¹³ In the event of a dispute between undertakings about access requests, the dispute resolution procedure specifically prescribed in Guideline 50 apply.

Formatted: Default Paragraph Font, Font: 9 pt

Formatted: Font: 9 pt

- size of the access seeker or of its customer base;
- existence of equivalent roaming offers or supply in the same [RLAH Country/Member State](#) where roaming is requested.

Request for resale of regulated roaming services may not be refused on the basis that the access seeker is not currently hosted on the MNO's network.

Guideline 6. Prioritisation of requests

The Roaming Regulation includes technology neutral provisions and access requests should, as the main rule, be handled as they are received. However, BEREC considers that this does not constrain operators to prioritize access requests when necessary. In the event that the number of access requests is higher than the visited network's ability to handle them, BEREC considers that priority should be given to requests related to establishing VoLTE-roaming services. It would be detrimental to roaming end-users if, after the phase-out of 2G and 3G, they would not be able to use essential services like voice and SMS or even not be able to reach emergency services when travelling within the [RLAH AreaEEA](#) (see Guideline 25). Nevertheless, this prioritisation of requests must be done in a non-discriminatory way, and commercial interests of the access provider should not be a relevant consideration (see also Guideline 5).

Guideline 7. Information required from an access seeker

MNOs must inform the access seeker promptly and in a timely manner about the information needed to make an adequate specified access request (including necessary facilities). Information required by wholesale roaming access providers must be limited to the minimum necessary to allow them to provide efficient wholesale roaming access, together with any evidence which may be necessary under the national law to establish that the access seeker is entitled to seek access under Article 3 Roaming Regulation. Information may be required at the outset of discussions about access. Further information may be required throughout the duration of the access agreement.

Guideline 8. Information required before signature of an access agreement

BEREC expects that non-technical information will be limited to such information which commercial parties would normally seek from one another at the outset of any agreement. Access seekers should in particular not be expected to provide any details of the service they expect to provide where these might reasonably be regarded as commercially sensitive.

Required technical information for resale of roaming and direct access services must be limited to technical information on e.g. interfaces and protocols used by the access seeker which are needed to assess compatibility with the services offered by the access provider. Any technical information that is not needed to assess compatibility with the requested services by the access seeker is not required in advance of negotiations.

It might be additionally required to give an initial estimate of traffic volumes to assess necessary connection capacities. Failure to deliver given volume estimates might delay the process (Guideline 45) but should not lead to penalties in any form such as the downgrading of services or changing agreed terms to the detriment of the access seeker. The prohibition on penalties does not preclude the negotiation of rates which are volume-related.



An efficient method of establishing communication between the parties so that access requests can be processed and implemented without delay should be established at the outset.

Guideline 9. Information required on an ongoing basis

The wholesale roaming access provider may lay down a reasonable procedure for the regular supply and updating of forecasts by the access seeker of its future demand (including, where appropriate, the geographical nature of that demand), where this is necessary to allow the access provider to dimension its service efficiently or to provide the necessary resources. The degree of foresight or precision required should not be excessive. It should be understood and accepted that demand is inherently uncertain and will depend in particular on the commercial success of the access seeker's retail service and trends in travel patterns.

3. Wholesale Roaming Access Services

Guideline 10. Direct access

MNOs must offer all wholesale roaming services for all available network technologies and all available network generations which are necessary for an MNO or full MVNO to offer retail roaming services and which have typically been offered under wholesale roaming agreements on regulated terms in the period before the Roaming Regulation [came into effect](#). The wholesale roaming services offered should allow, where it is technically feasible, the retail roaming provider to replicate the retail mobile services offered domestically.

The price for the bundle of services (including both set-up and ongoing charges) must not exceed the limits set out in Articles 9¹⁴, 10 and 11 Roaming Regulation, subject (where appropriate) to the currency exchange rules in Article 1 Roaming Regulation (see Guideline 52).

When negotiating wholesale roaming access for the purpose of providing retail roaming services, operators can, if both parties explicitly agree, negotiate innovative wholesale pricing schemes which are not directly linked to volumes actually consumed, such as flat payments, up-front commitments or capacity-based contracts, or pricing schemes that reflect variations of demand across the year. The negotiating parties can therefore, according to Article 3 (4) Roaming Regulation, explicitly agree not to apply the maximum regulated wholesale roaming charges set out in Articles 9, 10 and 11 Roaming Regulation for the period of validity of the agreement. This would exclude for this period the possibility for either party to subsequently request the application of volume-based maximum wholesale charges on actual consumption, as set out in Recital 21 Roaming Regulation. This alternative should be without prejudice to obligations as regards the provision of regulated retail roaming services in accordance with the Roaming Regulation.

Where the access seeker reasonably requests a service to be configured in a different manner from that set out in the Reference Offer and this different manner is not necessary for the replication of the domestic service of the access seeker while offering the regulated retail roaming service, fair and reasonable charges may be levied to cover any additional costs.

¹⁴ Article 9 also applies for VoLTE.

Guideline 11. Resale access

MNOs must offer:

- (a) the minimum set of wholesale roaming services required to allow a retail roaming provider with its own systems for handling all retail functions to provide a regulated retail roaming service. This has to include services provided by visited network operators and other third parties together with services provided by the access provider itself. Without prejudice to the generality of this requirement, this must include in particular:
 - i. access to the wholesale roaming services provided by visited network operators with which the MNO has a wholesale roaming access agreement;
 - ii. access to transit services used by the MNO for its own roaming business;
 - iii. access to all information on end-user usage;
 - iv. access to all wholesale functions and facilities provided by the MNO and used to supply its own retail roaming business, in particular contract negotiation and implementation, signalling, authentication, data clearing, billing interconnect, fraud handling, provisioning, Global Roaming Exchange and IP Exchange.
- (b) other wholesale services without which a retail roaming service would not be practical or economic. This has to include in particular resale of termination of incoming voice calls and outgoing SMS messages, neither of which is commonly included in wholesale roaming agreements.
- (c) retail functions which can practically or economically be provided only by the access provider.

In addition, they may offer:

- (d) any other services at their own discretion.

As regards the above:

- The price for the bundle of services under (a) must not exceed the limits set out in Articles 9¹⁵, 10 and 11 Roaming Regulation, subject (where appropriate) to the currency exchange rules in Article 1 Roaming Regulation (Guideline 52).
- The price for services offered under (b) (see Guideline 15) and (c) must be fair and reasonable. Services offered under (d) will be subject to commercial negotiation.
- Where a new wholesale roaming agreement is negotiated, existing resale access agreements will automatically be extended to cover access to the new visited network. Similarly, if a wholesale roaming agreement is varied or terminated, the relevant changes must apply automatically to existing access agreements.

Without prejudice to the general nature of the obligation, MNOs must offer services in the following indicative list:

- open access to technical interfaces, protocols or other core technologies which are required for the interoperability of the services necessary for a reseller to carry out for itself necessary retail functions (in particular billing, control of prepaid credit, control of bill shock, transparency obligations);

¹⁵ Article 9 also applies for VoLTE.

- access to operational support systems or equal software systems which are necessary to implement the resale of regulated roaming services.

Charges for the services mentioned in the paragraph above are limited by the caps defined in Articles 9¹⁶, 10 and 11 Roaming Regulation, subject (where appropriate) to the currency exchange rules in Article 1 Roaming Regulation (Guideline 52). BEREC notes that particularly in light of offering roaming services at domestic prices, MNOs can provide wholesale charges below those caps, as they are meant to be a maximum limit.

When negotiating regulated wholesale roaming access for the purpose of providing regulated retail roaming services, operators can, if both parties explicitly agree, negotiate innovative wholesale pricing schemes which are not directly linked to volumes actually consumed, such as flat payments, up-front commitments or capacity-based contracts, or pricing schemes that reflect variations of demand across the year. The negotiating parties can therefore according to Article 3 (4) Roaming Regulation explicitly agree not to apply the maximum regulated wholesale roaming charges set out in Articles 9, 10 and 11 Roaming Regulation for the period of validity of the agreement. This would exclude the possibility for either party to subsequently request the application of volume-based maximum wholesale charges on actual consumption for this specific period, as set out in Recital 21 Roaming Regulation. This alternative should be without prejudice to the obligations for the provision of regulated retail roaming services in accordance with that Roaming Regulation.

Where the access seeker reasonably requests a service to be configured in a different manner from that set out in the Reference Offer and this different manner is not necessary for the replication of the domestic service of the access seeker while offering the regulated retail roaming service, fair and reasonable charges should be levied to cover any additional costs.

Guideline 12. Machine-to-machine communication services

According to Recital 21 Roaming Regulation machine-to-machine (M2M) communications¹⁷ are included in the scope of the Roaming Regulation. M2M communications are therefore subject to the limitations of permanent roaming foreseen by the regulation and reasonable requests for regulated wholesale roaming access to offer M2M communications should be met if connected devices are periodically roaming.

All provisions in the Roaming Regulation, including the limitations of permanent roaming and the relevant wholesale roaming access obligations laid down in the Regulation also apply for M2M communication services except for the transparency measures detailed in Article 14 (2) and (4) Roaming Regulation, which are explicitly exempted.

If M2M communication services are used on a permanent basis in a visited network, for example in cases of prevailing roaming consumption and presence according to the Commission Implementing Regulation (EU) 2016/2286 (CIR), wholesale roaming access should be subject to commercial negotiations. According to Guideline 35, access providers may request information allowing them to determine whether a significant share of the access seeker's customers engage in permanent roaming. In relation to M2M, the relevant indicator

¹⁶ Article 9 also applies for VoLTE.

¹⁷ Definition in Recital 21 Roaming Regulation: M2M services are services involving an automated transfer of data and information between devices or software-based applications with limited or no human interaction.

could be the share of SIMs¹⁸ or IMSIs. Traffic information should not refer to specific information relating to individual traffic of the roaming provider's customers, but rather to aggregated roaming traffic information.

However, in practice the IoT/M2M market is constantly growing¹⁹ and the Roaming Regulation states that MNOs are expected to increasingly accept reasonable requests for wholesale roaming agreements which explicitly allow permanent roaming for M2M communications (Recital 21). Especially as the majority portion of current M2M communication does not generate much data, reasonable terms and charging models should allow for flexible wholesale roaming agreements. These may include tariff schemes which are not based on the volume of data consumed but instead, for example, on the number of connected machines per month, a flat price per device, level of quality of service (QoS), etc. BEREC expects that visited network operators will have a clear motivation to meet all reasonable requests for dedicated M2M communication technologies enabling IoT, such as LTE-M, NB-IoT, and the 5G IoT standards, etc.

BEREC believes that such a development is crucial for the establishment of a well-functioning cross-border market for M2M in the [RLAH AreaUnion](#). The development in the markets for wholesale roaming for M2M communications will show if there is a need for future regulation.

Guideline 13. Unregulated roaming services

BEREC considers that Guideline 10 and Guideline 11 should also apply to unregulated roaming services (e.g. roaming calls to and/or from a state outside the [RLAH AreaUnion](#)), with the sole exception that charges are not covered by price caps, but should be fair and reasonable²⁰.

Guideline 14. "Retail related" wholesale functions which can practically or economically be provided only by the access provider

MNOs have to offer all services commonly provided to resellers of roaming services²¹. Without prejudice to the generality of this requirement, this must include:

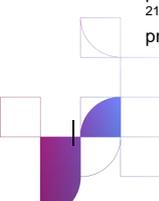
- a) billing of postpaid services
- b) credit control for prepaid services
- c) control of data bill shock
- d) services to implement retail transparency obligations
- e) information that might be needed to implement the Fair Use Policy (FUP) such as information about log-on data
- f) information required for disputes with customers
- g) fraud prevention

¹⁸ The term SIMs includes both SIM cards and eSIMs.

¹⁹ See main finding of the European Commission's sector inquiry report: https://ec.europa.eu/commission/presscorner/detail/en/ip_22_402

²⁰ In the event of a dispute between undertakings about unregulated roaming services, the dispute resolution procedure specifically prescribed in Guideline 50 apply

²¹ In the event of a dispute between undertakings about "retail related" wholesale functions, the dispute resolution procedure specifically prescribed in Guideline 50 apply.



The provision of any of these services may not be offered subject to a restriction that other services are additionally requested. Prices for such services have to be fair and reasonable in accordance with Guideline 15.

Guideline 15. Fair and reasonable prices

Where these Guidelines specify that “fair and reasonable” prices should be charged, compliance with this requirement will often necessitate consideration of the individual circumstances of the case²². When resolving disputes about non-compliance or any other dispute, NRAs will in particular take into account the following considerations:

- whether there is a “market rate” for such services (or broadly comparable services) or charges applied to other access seekers. Any charge significantly in excess of the market rate is unlikely to be reasonable;
- the cost of provision and the magnitude of the resulting return to the MNO. Such returns should not be excessive;
- the need to minimise the overall cost of resale access, in order to facilitate the objectives of the Regulation to promote retail competition, including via resale.

BEREC considers that, in the case of resale of ~~non-Union~~ roaming [outside the RLAH Area](#), resale prices allowing an efficient reseller to offer retail tariffs which are competitive with those of the access provider will normally be considered to be fair and reasonable. However, the access provider is expected to be able to objectively justify any price increases.

The basis of fair and reasonable charges must be made available to the access seeker upon request. This does not imply that the access provider needs to provide commercially sensitive information to the access seeker.

Guideline 16. Wholesale charges for emergency communications

At wholesale level, the conveyance of any type of emergency communications, that are mandated and are technically feasible to be used by roaming end-users (included also in the relevant [BEREC's](#) database), to the most appropriate PSAP must be free of charge for the roaming provider (with direct or resale access). The same holds for the transmission of caller location information to the most appropriate PSAP while using roaming services.

When there are mechanisms in place that allow both the visited network operator and the roaming provider to recognise that OTT-services are being used for emergency communications by a roaming end-user, BEREC considers that underlying data consumption of emergency communications from OTT services should be billed in roaming according to the Roaming Regulation provisions.

Guideline 17. Reception of public warnings

Visited networks should ensure that public warning systems transmit public warnings to end-users concerned, namely end-users who are located in the geographic areas potentially affected by imminent or developing major emergencies and disasters during the warning period, including roaming end-users. Roaming customers must receive public warnings without the need for any prior action on their behalf, except for the need for prior installation

²² In the event of a dispute between undertakings about fair and reasonable prices, the dispute resolution procedure specifically prescribed in Guideline 50 apply.



of a mobile application that enables the receipt of public warnings, should there be no other means to receive such warnings.

Guideline 18. Fair and reasonable charges for resale of termination

The wholesale roaming charge does not include the costs for terminating outgoing roaming SMS or incoming roaming voice calls. Therefore, these termination services cannot be considered to form part of a wholesale roaming resale service. These services must nevertheless be offered to resellers of wholesale roaming access under the terms of Guideline 11 (item (b)). BEREC considers prices for these services to be fair and reasonable.

Any charge in excess of the maximum mobile termination rate in accordance with the Commission Delegated Regulation²³ adopted pursuant to Article 75 of Directive (EU) 2018/1972 (i.e. Eurorates) is unlikely to be reasonable²⁴. The maximum mobile termination rate is understood to be a cap at retail level for any surcharge applied for regulated roaming calls received; therefore, the wholesale charge should be below this level. For off-net calls, a reasonable charge could be the difference, if any, between the revenue the host MNO receives for the termination and the rate charged for the termination by the visited network.

A fair and reasonable charge for termination of outgoing roaming SMS shall take account of income received by the MNO for the termination of incoming roaming SMS received by customers of the reseller, taking account of any commercial agreement for sharing of such income.

Objective justification regarding the basis of the charge must be made available to the access seeker upon request. This should include information about the necessity of such a charge in order to avoid providing services at a loss, and the reasonableness of the level of the charge.

Where the average termination charge paid by the MNO per outgoing SMS is significantly lower than the average termination charge levied by the MNO per incoming SMS, additional charging for reselling is unlikely to be justifiable.

There should be no charge for termination of incoming roaming SMS to resellers having resale access.

Guideline 19. Non-discrimination for operational procedures

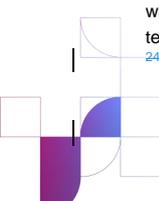
Where services are required to be offered in accordance with these Guidelines, all terms and conditions of supply (except price) must be equivalent to those relevant for the provision of services to the MNO itself.

Without prejudice to the generality of this requirement, it applies in particular to:

- a) the availability of access services and necessary facilities;
- b) maintenance periods;
- c) repair times in case of malfunctions;

²³ Commission Delegated Regulation (EU) 2021/654 of 18 December 2020 supplementing Directive (EU) 2018/1972 of the European Parliament and of the Council by setting a single maximum Union-wide mobile voice termination rate and a single maximum Union-wide fixed voice termination rate. According to Article 75 (2) EEC the delegated act shall be reviewed every five years, in each review it should be considered whether setting union wide voice termination rates is necessary. If the Commission decides not to impose a maximum mobile voice termination rate, a fair and reasonable charge should not exceed the rate set by the most recent delegated act.

²⁴ BEREC clarifies that it refers to the rates of Article 4(2) of the Commission Delegated Regulation (EU) 2021/654.



- d) the process of ordering and delivery;
- e) the process of announcing new or redefined access services;
- f) the process of supply of information.

Guideline 20. Value-added services

According to Recital 37 Roaming Regulation, the Roaming Regulation does not apply to the whole tariff that is charged for the provision of value-added services (VAS²⁵) but only to the tariff component corresponding to the connection to such services. This would allow for applying the charges set out in Articles 9 (1), 10 (1) and 11 (1) Roaming Regulation for voice calls, SMS and data services respectively that are solely limited to the connection to VAS and not the provision of the VAS itself. This does not preclude the possibility of the wholesale roaming agreements defining, on a voluntary basis, the application of rates at the wholesale level that allow the application of RLAH tariffs for VAS roaming communications or at least to some of them.

According to Recital 59 Roaming Regulation, numbering ranges used for value-added services are subject to particular pricing conditions at the national level, and in many cases their termination rates are not regulated²⁶. While this is understood by roaming providers, the level of the wholesale charges they will incur may still be unexpectedly high. In a roaming scenario, operators are unable to address this issue because they lack information on numbering ranges used for value-added services throughout the [RLAH Area Union](#).

Therefore, according to the Roaming Regulation, the numbering ranges used for VAS in the different [RLAH Countries Member States](#) can be found in the database established by BEREC according to Article 16 Roaming Regulation. ²⁷

Guideline 21. QoS obligations for wholesale roaming access seekers

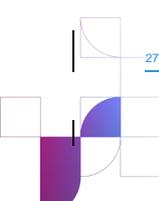
According to Recital 14 Roaming Regulation, the operators seeking wholesale roaming access should have the freedom to negotiate their wholesale roaming agreements according to their own commercial needs and the best interests of their end-users. Therefore, in the course of making the transition towards next generation mobile communications networks and technologies, roaming providers should gradually ensure wholesale roaming access that enables the provision of retail roaming services in other [RLAH Countries Member States](#) under equivalent contractual conditions as in their home [country Member State](#), in accordance with the objectives of RLAH. Roaming providers should offer retail roaming services that are equivalent to mobile communication services that they offer domestically where there is widespread coverage or when there are competitive offers for access to such next generation mobile communications networks and technologies in the visited [RLAH Country Member State](#).

BEREC considers that wholesale roaming access seekers have a best effort obligation to seek access to those visited networks, which allow them to meet the requirements of Article 4 and

²⁵ Value added services in the context of the Roaming Regulation are, for example, calls to premium-rate numbers, freephone numbers or shared cost numbers.

²⁶ Recital 7 of Commission delegated regulation (EU) 2021/654 for setting a single maximum Union-wide mobile voice termination rate and a single maximum Union-wide fixed voice termination rate states the above. Therefore, termination of calls to value added services should be excluded from the scope of this Regulation.

²⁷ The database can be consulted at the BEREC Website: <https://www.berec.europa.eu/en/vas-numbering-ranges>



5 as well as of Recital 14 Roaming Regulation. Without prejudice to the principle of technology neutrality of wholesale roaming agreements referred to in Recital 14, roaming providers should seek to ensure that the wholesale roaming agreements provide the customers with equivalent mobile communications services like at home, where the underlying technology is available. To that end, roaming providers therefore should not only consider their commercial needs, such as for instance selecting the roaming partner offering, the highest discount, but they must also take into account the technological level/maturity of the visited networks regarding the obligation to offer equivalent retail roaming conditions to the services offered domestically. They also do not necessarily have to conclude agreements with operators whose networks have a higher quality than that available in the roaming provider's own domestic network.

BEREC considers that Recital 14 Roaming Regulation provides room for gradual transition to new generation/technologies. BEREC considers that this transition should not take into account only the coverage for the next generation networks of the access provider but also the access seeker's customers average travelling patterns as the latter is related to their best interests as well as ensuring availability of essential services for consumers.

Furthermore, BEREC considers that when next generation coverage in the visited country is considerably low (independently of the visited network and not cumulative for all networks) or when there is only one operator offering next generation services in the visited country with significant coverage, access seekers might delay their access requests.

According to Recital 27 Roaming Regulation, during the transition to next generation mobile communications networks and technologies, the roaming provider may offer the regulated retail roaming service with the existing available mobile communication technologies where the implementation of those networks and technologies by the roaming provider and the visited network operator are not comparable.

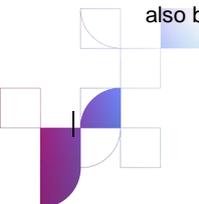
Disparities between technological developments in different [RLAH Countries](#)~~Member States~~ may delay the negotiation/re-negotiation of wholesale roaming agreements with the purpose to achieve the same level of QoS. However, operators are expected to do their utmost and best effort to enable same service as at home for their customers. As newer technologies'/generations' coverage expands ~~across the Union~~, further delays are not acceptable.

4. Reference Offer

Guideline 22. Obligations to publish a Reference Offer

Article 3 (5) Roaming Regulation requires access providers to publish their standard Reference Offer. The Reference Offer should cover all the aspects described below in sufficient detail for access seekers to understand the nature of the service offered. The Reference Offer should also include any additional services which the access provider wishes to provide to any requesting party, over and above those which are regarded as necessary.

The terms and conditions of the Reference Offer should be constructed in accordance with these Guidelines and any relevant regulatory requirements. To the extent that this would not conflict with these Guidelines or relevant regulatory requirements, the Reference Offer should also be constructed in accordance with normal commercial practice.



Formatted: RegistrationNumber, Left
Formatted: Font: 12 pt

The Reference Offer has to be sufficiently detailed to allow any access seeker to replicate the retail service of the access provider (including for example QoS parameters as mentioned in Guideline 24).

The maximum charge for each regulated service offered must be stated explicitly. Lower charges and/or discounts (calculated on the basis of volume or other factors) may be negotiated individually. No charges should be levied as a consequence of failure to meet a volume forecast submitted for planning purposes or failure by the access seeker to take some action within the timescale requested. The withholding of a negotiated discount as a direct consequence of the access seeker's failure to meet a relevant volume target is not to be construed as a penalty for this purpose.

Access providers should include in their reference offer information about whether cell broadcast is available in their country for the transmission of public warnings. This information is necessary for the roaming providers in order to comply with the transparency obligations with regard to emergency services.

The Reference Offer must be prepared and finalized in accordance with standard national procedures for the preparation of Reference Offers under the provisions of EECC. BEREC expects that in all cases the views of access seekers will be sought and taken into account during the formulation of the Reference Offer.

The Reference Offer has to be published on the MNO's website in an easily accessible way. Planned modifications must be notified by a secure means to undertakings which have current access agreements or are in active negotiation for such agreements. BEREC considers it a good practice that MNOs inform the NRA about the publication of the Reference Offer (including cases of updates/modifications).

The access provider may also be prepared to negotiate bespoke agreements with individual access seekers. These are not required to be covered by the Reference Offer.

Guideline 23. Agreement on performance

BEREC considers that the Reference Offer shall incorporate a Service Level Agreement (SLA) which clearly sets out the standards of the service which the access seeker can expect in the case of direct and resale wholesale roaming access. Where no absolute benchmarks are available, in particular where the quality of service in question depends on the performance of other network operators, it is acceptable to define standards by reference to those experienced by the visited network operator's own retail customers. The Agreement should incorporate Service Level Guarantees with appropriate compensation in the event of failure to meet those guarantees on all aspects of performance which are critical to the provision of the access seeker's own retail service. In particular, BEREC considers that minimum service levels should generally be specified for ordering, delivery, normal operation, maintenance and repairs. The specified minimum service levels should be at least as good as those normally achieved by the MNO in respect of services provided to itself and should, in addition, be consistent with best industry practice.

Compensation for failure to meet agreed minimum service levels should be appropriate to incentivise achievement of those levels and should not be less favourable than in the case of normal commercial practice.

Access providers should supply without delay and thereafter on a regular basis, a quality report to the access seeker, capable of demonstrating whether or not the specified quality



parameters have been met and the extent of any non-conformity. The report has to show the quality levels achieved in respect to services provided to each of the following:

- the access seeker in question,
- all access seekers in aggregate,
- the MNO itself.

Procedures should be established for the automatic payment of any compensation due at the same time as the production of the Report.

In order to minimise unnecessary costs, the degree of detail reported may be limited where there is no prior reason for concern over quality and where problems would be readily apparent. In contrast, where there is a history of quality problems within the responsibility of the access seeker, a great level of reporting detail is likely to be justified.

Guideline 24. Information on QoS parameters and specifications provided in the Reference Offer

The Reference Offer must contain and maintain an updated description of the MNO's QoS parameters and specifications that it supports for the relevant routing scenarios. BEREC assumes this will include at least information on generally available radio technologies, frequency bands and other configurations or parameters that could support consistent throughput should the incoming roaming customer's device supports such configurations.

The Reference Offer must also include the estimated maximum and advertised (i.e. speed that can be realistically delivered to end-users) download and upload speeds per available technology for retail roaming customers. This information on the speeds is the same as that to be provided to customers by operators according to the Open Internet Regulation²⁸ and the BEREC Guidelines on the Implementation of the Open Internet Regulation²⁹.

The descriptions can be contained in an annex and might be based partly or wholly on available industry recommendations, if applicable.

According to Recital 15 Roaming Regulation, the visited network operator, taking also into account the relevant wholesale roaming agreement and without prejudice to the relevant retail obligations, should ensure that roaming customers are not subject to conditions that are less advantageous than those it offers to its domestic customers.

According to Recital 27 Roaming Regulation, operators should take reasonable measures to minimise any undue delay in handovers between mobile communications networks. Furthermore, national administrations and operators can conclude spectrum coordination agreements and ensure coverage, at least along 5G corridors and terrestrial transport paths.

In this regard, BEREC encourages operators to continue working on such network coordination, making it possible to create handovers without disconnecting and thus

²⁸ Regulation (EU) 2015/2120 of the European Parliament and of the Council of 25 November 2015 laying down measures concerning open internet access and retail charges for regulated intra-EU communications and amending Directive 2002/22/EC and Regulation (EU) No 531/2012, <https://eurlex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02015R2120-20181220>

²⁹ BoR (22) 8120) 142 "BEREC Guidelines on the Implementation of the Open Internet Regulation".



enhancing the experience of end-users, taking also into account the different pricing especially in cases of intra-EEA communications³⁰.

Guideline 25. Phasing-out of previous mobile generations

In order to avoid any problems related to the lack of interoperability of mobile services in roaming agreements, BEREC considers it necessary for visited network operators to inform of their plans concerning the phasing-out of previous generations of mobile network technologies in the Reference Offer, as far as these phase-out plans are public. This should allow the access seeker to adapt to such changes and ensure the proper functioning of the services covered by the roaming agreements. In case of wholesale roaming resale access, access providers must pass the information they receive from visited network operators to the MVNOs and resellers they serve.

Guideline 26. Information regarding access to emergency services through emergency communications

The Reference Offer should incorporate all information necessary to enable the retail roaming providers to ensure that their customers have access, free of charge, to emergency services through emergency communications to the most appropriate PSAP and to enable the transmission, free of charge, of caller location information to the most appropriate PSAP while using roaming services.

The Reference Offer should contain information on at least what type of emergency communications are mandated and technically feasible for ensuring access for roaming customers under national measures in the visited [RLAH CountryMember State](#). It should also contain information on the role of the roaming provider about how to convey emergency communications and transmit the caller location information to the most appropriate PSAP. This information should enable the roaming provider to provide the emergency communication and caller location [information](#), if needed.

Emergency communications include calling the single European emergency number '112', as well as alternative means of access to emergency services through emergency communications, in particular for roaming customers with disabilities, which are mandated in each [RLAH CountryMember State](#) and are appropriate for use by roaming customers. Such alternative means of access is included in the database managed by BEREC pursuant to Article 16 Roaming Regulation.³¹

These alternative means of access may include:

- a real time text service or total conversation service as provided for by Directive (EU) 2019/882 of the European Parliament and of the Council, or
- other non-voice communications services, such as SMS, messaging or video services through emergency applications, or
- relay services, which [RLAH CountriesMember States](#) deploy taking into account the requirements laid down in [the legal frameworkUnion law](#) on accessibility of products

³⁰ For example when initiating a call in the home MS and continue it while travelling from the home MS to a visited MS, the charging of this call will not shift from intra-EEA to RLAH when crossing the border.

³¹ [The relevant databases can be consulted at the BEREC website: https://www.berec.europa.eu/en/emergency-means](https://www.berec.europa.eu/en/emergency-means)

and services, the European Accessibility Act and the capabilities and technical equipment of the national PSAP system.

The implementation of the alternative means of access to emergency services available to roaming customers with disabilities and the delivery of caller location information should be based to the greatest extent possible on European standards or specifications. Such standards should be promoted ~~by the Commission and Member States~~ in cooperation with European standardisation bodies, and other relevant bodies. BEREC expects roaming providers to take account of the delegated ~~act~~ adopted according to Article 109 (8) EECC on the measures necessary to ensure the compatibility, interoperability, quality, reliability and continuity of emergency communications in the ~~RLAH Area~~ with regard to caller location information solutions, access for end-users with disabilities and routing to the most appropriate PSAP. The first such delegated act ~~was~~ adopted ~~on 16~~ ~~by 21~~ December 2022.

In addition, according to Recital 19 wholesale roaming agreements should include information on the technical parameters for also ensuring the transmission of caller location information, including handset-derived information, to the most appropriate PSAP in the visited ~~RLAH Country~~ ~~Member State~~. BEREC considers that for meeting the requirement about the transmission of handset derived information, providers of handsets' operating systems should also co-operate in the standardisation process. The provision of caller location information from handsets should be free of charge when it is going to be used for emergency communications.

Guideline 27. Interconnection management

For direct access or real-time connections in case of resale, the operators might need to implement procedures for traffic and network management for ensuring the orderly transport of traffic in case of malfunction or overflow. Examples of such procedures may include alternative traffic routes to repair access services during malfunctioning or overflow.

Guideline 28. Conversion of megabytes to gigabytes

According to the practice introduced by the Regulation (EU) 2017/920 of the European Parliament and of the Council of 17 May 2017 amending Regulation (EU) No 531/2012 as regards rules for the wholesale roaming market, the maximum wholesale charge for regulated data roaming services is set in Euros per gigabytes where a gigabyte is equal to 1000 megabytes. This conversion ratio will continue to apply.

Guideline 29. Interoperability, interfaces and protocols

MNOs must use acknowledged technical standards, protocols and methods which must be fully described either in the Reference Offer or must be fully available free of charge to access seekers in documents, existing industry databases, processes or de facto standards. Where there is no such standard or method, MNOs must avoid approaches which are unduly burdensome for the access seeker.

Guideline 30. Implementation of CAMEL protocol phase I for direct access

The Reference Offer will include as a minimum access to CAMEL (Customised Applications for Mobile networks Enhanced Logic) phase I functionalities, allowing access seekers a basic call management of prepaid calls.



Guideline 31. Implementation of CAMEL protocol advanced phases for direct access

When the operator has more advanced phases of CAMEL (or DIAMETER) at its own disposal, the Reference Offer will include the use of these functionalities as an optional feature.

Guideline 32. Testing procedures

The Reference Offer must describe transparent and flexible procedures for testing, in particular of interconnection, interoperability, forecasting, ordering and delivering services. Timescales must be consistent with the maximum permitted implementation period (see Guideline 44).

Guideline 33. Security, data privacy and interconnection

The Reference Offer may set out reasonable provisions on security, data privacy and interconnection issues consistent with the requirements of the EU Regulatory Framework. In particular for data privacy, the Reference Offer should be in accordance with the legislative framework of the General Data Protection Regulation (EU) 2016/679 (GDPR) and the Directive 2002/58/EC on privacy and electronic communications.³² Regarding the security of networks and services, the Reference Offer should be in accordance with ~~Articles 40 and 41 of Directive (EU) 2022/2555~~~~2018/1972 and Directive (EU) 2016/1148~~ concerning measures for a high common level of security of ~~cybersecurity network and information systems~~ across the Union ~~and the relevant national implementing legislations~~.³³

The parties are subject to the terms for the protection of personal data provided by the applicable legal provisions. For that, it is necessary that both parties commit themselves to observing secrecy rules and maintaining data secrecy when implementing the appropriate technical and organisational measures necessary for managing the risks posed to the security of networks and services and for ensuring confidentiality of communications and privacy according to the aforementioned European regulatory framework.

Each party's obligations have to be discussed and agreed on and documented in the wholesale roaming agreement.

BEREC further supports the use of advanced specifications and protocols for data security, privacy and interconnection, such as DIAMETER (including SEPP) and/or HTTP/2 between operators as next generation mobile networks come into use.

Guideline 34. Information about permanent roaming and anomalous or abusive use

The Reference Offer may include conditions to prevent permanent roaming or anomalous or abusive use of wholesale roaming access by the access seeker's customers.

These conditions may include:

³² To be replaced by the ePrivacy Regulation currently subject of legislative negotiation: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52017PC0010>

³³ ~~Both the NIS Directive and Articles 40 and 41 of the EEECC are proposed to be replaced by a new Directive of the European Parliament and of the Council on measures for a high common level of cybersecurity across the Union, repealing Directive (EU) 2016/1148:~~ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020PC0823>

- the specific measures that the visited network operator may take to prevent permanent roaming or anomalous or abusive use of wholesale roaming access;
- the objective criteria on the basis of which such measures may be taken. Such criteria may refer to aggregate roaming traffic information. They should not refer to specific information relating to individual traffic of the access seeker's roaming customers.

The visited network operator should establish, based on objective criteria, that permanent roaming by a significant share of the access seeker's customers or anomalous or abusive use of wholesale roaming access is taking place. The visited network operator has to inform the access seeker accordingly.

Guideline 35. Measures to prevent permanent roaming or anomalous or abusive use

The Reference Offer may include measures to prevent permanent roaming or anomalous or abusive usage. The Reference Offer may include a condition allowing the visited network operator to request information from the access seeker in order to determine whether a significant share of the access seeker's roaming customers engage in permanent roaming or whether there is anomalous or abusive use of wholesale roaming in the visited network. Such information is to be collected on the basis of objective indicators in accordance with the detailed rules on the application of a FUP in the CIR, or any future review of this implementing act.

Operators could also include in their Reference Offers measures that are less stringent than the measures set out in Recital 20 Roaming Regulation, for instance by using higher wholesale charges which do not exceed the maximum wholesale caps provided in the Roaming Regulation for volumes exceeding an aggregated volume specified in the agreement.

Less stringent measures could also consist of a commitment by the access seeker to adopt, revise or enforce the fair use policies applicable to its customers in accordance with the rules detailed in the CIR or any future review of this implementing act. The visited network operator can also request that the wholesale roaming agreement is revised in case of widespread permanent roaming or abusive or anomalous use.

The Reference Offer may, as a last resort, provide for the possibility to terminate the wholesale roaming agreement where less stringent measures have failed to address the situation.

Guideline 36. Procedure prior to the unilateral termination of wholesale roaming agreements in case of permanent roaming or abusive or anomalous usage

The Roaming Regulation requires that the unilateral termination of wholesale roaming agreements may only take place upon prior authorization by the relevant national regulatory authority. The visited network operator can terminate the wholesale roaming agreement on the grounds of permanent roaming or anomalous or abusive use of wholesale roaming access after having received clearance from its NRA.

The termination is preceded by a request of the visited network operator to the relevant NRA, which must also consult the NRA responsible for the access seeker. The procedure for clearing a request for termination of a wholesale roaming agreement by the NRA of the visited network operator must not take longer than three months from the receipt of the request of the visited network operator. The Commission must be informed accordingly.



The respective NRAs of the visited network operator and of the access seeker may each request BEREC to adopt an opinion with regard to the action to be taken in accordance with the Roaming Regulation. BEREC shall adopt its opinion within one month after receiving such a request.

In cases where BEREC is consulted, the NRA of the visited network operator must await and take utmost account of BEREC's opinion before deciding whether to authorise the termination of the wholesale roaming agreement. The three-month period must in any case not be exceeded.

The NRA of the visited network operator must make the information concerning the authorisation to terminate the wholesale roaming agreement available to the public, e.g. on their website, subject to business confidentiality.

These Guidelines are without prejudice to the power of an NRA to require the immediate cessation of a breach of the obligations set out in the Roaming Regulation, pursuant to Article 17 (7) Roaming Regulation and to the right of the visited network operator to apply adequate measures in order to combat fraud.

Guideline 37. Definition of organised resale

Organised resale occurs when a number of SIMs have been the object of organised resale to persons not effectively residing or having stable links in the [RLAH CountryMember State](#) of the access seeker for purposes other than periodic travel. Such organised resale may lead to permanent roaming as referred to in Guideline 35. In that case, the visited network operator may take the measures against permanent roaming agreed on in the wholesale roaming agreement with the access seeker, such as the measures described in Guideline 35 and Guideline 36.

Guideline 38. Fraud prevention procedure

Procedures to prevent fraud may be implemented to the extent necessary to comply with legal obligations or in accordance with normal commercial practice.

Both parties shall lay down and agree on fraud prevention procedures concerning fraudulent or unauthorized use by roaming customers to comply with legal obligations.

Guideline 39. Wholesale roaming agreement duration including any break clauses

The duration of the wholesale roaming agreement may be set to suit both parties. However, BEREC considers that neither party is entitled to insist (or to specify terms which have the same practical effect as insistence) on a wholesale roaming agreement which is either unduly short or long. BEREC expects, according to practice in place, that most wholesale roaming agreements will be negotiated (or reviewed, with the possibility by the access seeker to break) on an annual basis.

An MNO is not allowed to cease an already allowed access service without objective justification, in which case an appropriate period of notice must be given. In resolving any dispute on cessation of service, an NRA should take into account all relevant factors, including the following:



- the reasonableness of the period of notice, taking into account the reasons for cessation;
- the availability of suitable alternatives;
- the equivalence of treatment with that relevant to the MNO's own services;
- the appropriateness of any migration procedure offered;
- the evidence of permanent roaming or anomalous or abusive use;
- the application of less stringent measures to prevent permanent roaming or anomalous or abusive use.

This is without prejudice to the specific case where visited network operators are allowed to unilaterally terminate a wholesale roaming agreement in case of permanent roaming or anomalous or abusive use of wholesale roaming access upon prior authorisation by the visited network operator's NRA (see Guideline 36).

Guideline 40. Restrictions on conduct of business

The wholesale roaming agreement should not impose any restrictions on the access seeker except those which are fully described in the Reference Offer, those which are required by law or those which would be regarded as normal commercial practice. Restrictions on the freedom of the access seeker to conduct its business as it sees fit in accordance with the law should generally be inadmissible. Technical restrictions may be imposed only where there is an objective justification for the restriction. Where the access provider imposes restrictions on the access seeker, it shall readily provide objective justification on request.

Those restrictions that can be carried out as a consequence of the evidence of organised resale, permanent roaming, or anomalous or abusive use of wholesale roaming services should be described in the Reference Offer (see Guideline 34 and Guideline 35).

Guideline 41. Supply conditions which deter entry

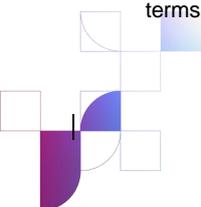
Access providers may impose safeguards to assure payment for services provided or to assure recovery of investments undertaken specifically to provide access. Any such safeguards must be proportionate, such as would be standard commercial practice between willing buyer and willing seller, and should be discontinued when they are no longer necessary. They should not have the effect of imposing insuperable barriers to entry, especially for small access seekers.

The proportionality of these safeguards could be related to projected volumes or actual volumes corresponding to the billing cycle. For example, bank guarantees or prepaid agreements are tools to safeguard those services provided at wholesale level.

Contractual requirements which seek to impose exclusivity clauses or bundling of services or other requirements which have anti-competitive effects are unacceptable unless there is an exceptional justification.

Guideline 42. Management and implementation of new roaming agreements

The wholesale roaming agreement has to be concluded in a written agreement and include terms and conditions and all necessary specifications to enable both parties to fulfil their rights



and obligations in compliance with legal provisions. Any changes, amendments and/or additions that arise during time must be agreed on and documented.

The specifications must include all processes, e.g. installation, configuration, running, testing, as well as the necessary changes to ensure the implementation of direct wholesale roaming access or wholesale roaming resale access according to Article 3 Roaming Regulation.

In case of any update to the existing agreement or the opportunity to conclude a new roaming agreement, the access seeker has to be informed by the MNO without undue delay. Both parties must evaluate the impact of any such change for their customers and agree on the necessary actions to be performed.

Guideline 43. Update of the Reference Offer

The Reference Offer should be kept up-to-date to reflect the regulated prices. Apart from that, it should be updated as soon as possible:

- (1) in order to be compliant with a decision of the NRA or with an update of the BEREC Guidelines; or
- (2) when the existing Reference Offer no longer properly or fully describes the services on offer; or
- (3) according to the provisions in the Roaming Regulation.

The Reference Offer must describe a reasonable procedure for the processing of requests for new methods of roaming access (including necessary facilities) and for the resulting modification of the Reference Offer.

Guideline 44. Timing issues

The time limits set out in Article 3 (5) Roaming Regulation should be regarded as maxima. Notwithstanding the time limits, access providers should make reasonable efforts to respond as soon as possible. Where the access provider requires information from the access seeker in order to proceed, and the provision of this information causes delays, the period of any such delay shall not count towards any relevant time limit.

Guideline 45. Responses to requests for access

BEREC considers that the access provider must process an initial request for wholesale roaming access (including necessary facilities) in a timely fashion (two weeks should be sufficient, barring exceptional circumstances) and professional manner (i.e. acknowledging the receipt of the request, requesting missing information and specifying the missing information). If necessary or requested, the MNO must grant the possibility to orally discuss the access request with the access seeker.

Guideline 46. New and modified services

New or modified services shall be offered to the access seeker (or provided by the MNO itself) in a timely manner. The Reference Offer shall be amended accordingly.



Guideline 47. Negotiation time

A draft wholesale roaming agreement should be made available to the access seeker for signature within one month of the access request. The draft shall remain open for signature until such time as the Reference Offer is amended.

Guideline 48. Implementation time

An access agreement should be implemented as soon as possible but in any case within three months of signing the contract. BEREC expects that both parties will devote necessary resources to comply with this.

5. Disputes and NRA intervention

Guideline 49. Modifications of Reference Offers by NRAs

If necessary, NRAs can impose changes to Reference Offers, including the specific measures that the visited network operator may take to prevent permanent roaming or anomalous or abusive use of wholesale roaming access, and the objective criteria on the basis of which those measures are imposed to give effect to the obligations laid down in Article 3 Roaming Regulation.

Guideline 50. Dispute resolution

In accordance with Article 18 Roaming Regulation, in the event of a dispute between undertakings providing electronic communications networks or roaming services in a [RLAH Country](#)~~Member State~~, the dispute resolution procedures laid down in Articles 26 and 27 of Directive (EU) 2018/1972 should be applied.

Disputes between access providers and access seekers on the rates applied to wholesale roaming services necessary for the provision of regulated retail roaming services may be referred to the NRA or NRAs pursuant to Articles 26 and 27 of Directive (EU) 2018/1972. In case of cross-border disputes (i.e. where the dispute affects trade between ~~Member States~~), the NRAs should consult BEREC in order to bring about a consistent resolution of the dispute. Where BEREC has been consulted on a case involving at least two NRAs from different [RLAH Countries](#)~~Member States~~, NRAs have to await BEREC's opinion before taking action to resolve the dispute.

In the event of a dispute between a roaming subscriber and his retail provider which is a reseller concerning an issue falling within the scope of the Regulation, MNOs should provide any co-operation which the reseller may reasonably require. This includes out-of-court dispute resolution procedures as laid down in Article 25 of Directive (EU) 2018/1972.

In the event of a cross-border dispute, parties involved in agreements on permanent roaming should have recourse to the dispute resolution procedure laid down in Article 27 of Directive (EU) 2018/1972.



Guideline 51. General intervention of NRAs or other CAs apart from unilateral termination and disputes

NRAs or other competent authorities (CAs) may intervene on their own initiative in order to ensure compliance with the Roaming Regulation. In particular, according to Article 17 (6) Roaming Regulation NRAs or other CAs in the situations referred to under Article 61(2), points (b) and (c), of Directive (EU) 2018/1972 shall, where necessary, make use of the powers under Article 61 of Directive (EU) 2018/1972 to ensure adequate access and interconnection in order to guarantee the end-to-end connectivity and interoperability of roaming services, for example where customers are unable to exchange regulated roaming SMS messages with customers of a terrestrial public mobile communications network in another [RLAH CountryMember State](#) as a result of the absence of an agreement enabling the delivery of those messages.

Where an NRA or another CA finds that a breach of the obligations set out in the Roaming Regulation has occurred, it has the power to require the immediate cessation of such a breach.

Guideline 52. Charges in currencies other than the Euro

Articles 9 to 11 Roaming Regulation set out the applicable wholesale caps. When converting these caps to currencies other than Euro, operators should use the method set out in Article 1 (4) Roaming Regulation. This means that the values shall be determined by applying the average of the reference exchange rates published by the European Central Bank in the Official Journal of the European Union (OJEU) on 15 January, 15 February and 15 March of the relevant calendar year.

~~This means that from 1 July 2022, the average of the exchange rate published on 15 January 2022, 15 February 2022 and 15 March 2022 should be used. The same exchange rates should be used for converting the new wholesale price for data roaming services applicable from 1 January 2023.~~

According to Article 1 (4) [Roaming Regulation](#) the annually revised limits in national currencies shall apply from 15 May. For example, for the period 15 May ~~2026~~2023 – 15 May ~~2027~~2024, the average of the exchange rates published on 15 January, 15 February and 15 March ~~2026~~2023 should be used. This means that for the case of glide path (i.e. price caps for data services), the conversion with the new average exchange rate will take place four and a half months after the price decreases on 1 January of each year of the glide path. ~~The same applies for voice and SMS in 2025, when the price cap for these services decreases.~~

If there is no publication on the date specified, the applicable reference exchange rates should be those published in the first OJEU following that date and containing such reference exchange rates³⁴.

³⁴ In exceptional cases, there might be exchange rates for two dates published in the OJEU at the same date. In such cases, there are no specific method defining which of the exchange rates to be used. BEREC considers that for example using the exchange rate for the date closest to the 15 January, 15 February or 15 March, or the average of the exchange rates of the two dates, would both be viable options and should be for the NRAs to decide, case by case.

[BEREC BoR \(26\) 3822\) 147](#)

Formatted: RegistrationNumber, Left

Formatted: Font: 12 pt

The maximum wholesale rates for voice, SMS and data may be calculated to the maximum number of decimal places permitted by the official exchange rate. This sets the maximum that can be charged in the national currency. Providers may wish in practice to quote charges in whole numbers of currency units although this practice is not compulsory. In this instance, the numbers should be rounded down. Rounding up of these numbers to above the level of the relevant cap is not permitted under any circumstances. VAT could be included based on the maximum number of decimals before rounding down the total charge (including VAT).

[As regards the currency conversion for Hryvnia \(UA currency\), the conversion is carried out by applying the average of the exchange rates from Euro to Hryvnia published by the National Bank of Ukraine as of 15 January, 15 February and 15 March of the relevant calendar year.](#)

[As regards the currency conversion for Moldovan leu \(MD currency\), the conversion is carried out by applying the average of the reference exchange rates published by the National Bank of Moldova for 15 January, 15 February and 15 March of the relevant calendar year.](#)

